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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,765	03/24/2004	Yi-Chung Chan	VLAP0092USA	2764
27765	7590	09/01/2005	EXAMINER	
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			SMITH, TYRONE W	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/708,765

Applicant(s)

CHAN ET AL

Examiner

Tyrone W. Smith

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/31/05 12/16/04 TS
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### **Claim Rejections - 35 USC § 112**

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-4, 8, 10, 12, 14, and 16-19 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "index parameter" in claims 1-4, 8, 10, 14, and 16-18 is a relative term, which renders the claim indefinite. The term "index parameter" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Examiner request clarification of the term and its meaning in the claims and specification.

The term "fixed-point architecture" in claims 9 and 17 is a relative term, which renders the claim indefinite. The term "fixed-point architecture" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Examiner request clarification of the term and its meaning in the claims and specification.

Claim 12 recites the limitation "the threshold value is programmable" in claim 12. There is insufficient antecedent basis for this limitation in the claim.

Claims 5-7, 11-13, 15 and 19 are also rejected based on 35 U.S.C. for depending on rejected claims 1-4, 8, 9, 10, 14, and 16-18.

**Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3, 12, 14, and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Baur (4949027) in view of Kau (DE424068).

Regarding Claim 1. Baur discloses an arrangement for and method of operating an electric step motor which utilize a controller (Figure 1 item 1) for outputting a control signal (Figure 1 item 7) to the stepping motor (Figure 1 item 2) according to a target displacement (Figure 1 item 15), moving the stepping motor (Figure 1 item 2) by way of a control signal, utilizing the controller for calculating a difference (Figure 1 item 11) between the target displacement (Figure 1 item 15) and an actual displacement (Figure 1 item 16) of the stepping motor; and utilizing the controller (Figure 1 item 1) for generating a control signal or parameter according to difference, and the actual displacement. However, Baur does not specifically disclose the stepper motor moving a load.

Kau discloses a controller (Figure 1 item 10) for sending control signals to the stepper motor (Figure 1 item 48) for controlling a load (Figure 1 item 54).

It would have been obvious to one of ordinary skill at the time of invention to use Baur's control of a stepper motor with the concept of Kau's. The advantage of combining the two would provide a system to ensure rapid correction of load changes while minimizing effects on load characteristics.

Regarding Claims 2, 3 and 12. Kau discloses utilizing the controller (Figure 1 item 10) to compare the difference and a threshold value, wherein if the difference is greater than the threshold value; the parameter (read from an sensor) is utilized to update the control signal or parameter.

It would have been obvious to one of ordinary skill at the time of invention to use Baur's control of a stepper motor with the concept of Kau's. The advantage of combining the two would provide a system to ensure rapid correction of load changes while minimizing effects on load characteristics.

Regarding Claims 14 and 15. Baur discloses an arrangement for and method of operating an electric step motor which utilize a controller (Figure 1 item 1) for outputting a control signal (Figure 1 item 7) to the stepping motor (Figure 1 item 2) according to a target displacement (Figure 1 item 15), a device (Figure 1 item 16) for tracing an actual position associated with the stepper motor, moving the stepping motor (Figure 1 item 2) by way of a control signal, utilizing the controller for calculating a difference (Figure 1 item 11) between the target displacement (Figure 1 item 15) and an actual displacement (Figure 1 item 16) of the stepping motor; and utilizing the controller (Figure 1 item 1) for generating a control signal or parameter according to difference, and the actual displacement. However, Baur does not specifically disclose the stepper motor moving a load and utilizing the controller (Figure 1 item 10) to compare the difference and a threshold value, wherein if the difference is greater than the threshold value, a parameter is utilized to update the control signal or parameter.

Kau discloses a controller (Figure 1 item 10) for sending control signals to the stepper motor (Figure 1 item 48) for controlling a load (Figure 1 item 54). Kau discloses utilizing the controller (Figure 1 item 10) to compare the difference and a threshold value, wherein if the

difference is greater than the threshold value; the parameter (read from an sensor) is utilized to update the control signal or parameter.

It would have been obvious to one of ordinary skill at the time of invention to use Baur's control of a stepper motor with the concept of Kau's. The advantage of combining the two would provide a system to ensure rapid correction of load changes while minimizing effects on load characteristics.

5. Claims 5-7 rejected under 35 U.S.C. 103(a) as being unpatentable over Baur (4949027) and Kau (DE424068) as applied to claims 1-3, 12, 14, and 15 above, and further in view of Nazarian et al (4685007)

Baur discloses an arrangement for and method of operating an electric step motor which utilize a controller (Figure 1 item 1) for outputting a control signal (Figure 1 item 7) to the stepping motor (Figure 1 item 2) according to a target displacement (Figure 1 item 15), a device (Figure 1 item 16) for tracing an actual position associated with the stepper motor, moving the stepping motor (Figure 1 item 2) by way of a control signal, utilizing the controller for calculating a difference (Figure 1 item 11) between the target displacement (Figure 1 item 15) and an actual displacement (Figure 1 item 16) of the stepping motor; and utilizing the controller (Figure 1 item 1) for generating a control signal or parameter according to difference, and the actual displacement. However, Baur does not specifically disclose the stepper motor moving a load and utilizing the controller (Figure 1 item 10) to compare the difference and a threshold value, wherein if the difference is greater than the threshold value, a parameter is utilized to update the control signal or parameter.

Kau discloses a controller (Figure 1 item 10) for sending control signals to the stepper motor (Figure 1 item 48) for controlling a load (Figure 1 item 54). Kau discloses utilizing the



controller (Figure 1 item 10) to compare the difference and a threshold value, wherein if the difference is greater than the threshold value; the parameter (read from an sensor) is utilized to update the control signal or parameter. However, neither Baur nor Kau discloses a stepping motor applied to an optical disk.

Nazarian discloses a disk drive with rack zero location system that includes stepping motor (Figure 3 item 34) applied to an optical drive (Figure 3 item 10) where the loading device is a pick up head or transducer (Figure 3 item 32) for the disk drive.

It would have been obvious to one of ordinary skill in the art at the time of invention to use Baur's an arrangement for and method of operating an electric step motor and Kau's invention with Nazarian's a disk drive with rack zero location system. The advantage of combining the two would provide a low cost disk drive system in which track zero information is contained in a sector located on the disk.

6. Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Baur (4949027) and Kau (DE424068) as applied to claims 1-3, 12, 14, and 15 above, and further in view of Kobayashi et al (6911800).

Baur discloses an arrangement for and method of operating an electric step motor which utilize a controller (Figure 1 item 1) for outputting a control signal (Figure 1 item 7) to the stepping motor (Figure 1 item 2) according to a target displacement (Figure 1 item 15), a device (Figure 1 item 16) for tracing an actual position associated with the stepper motor, moving the stepping motor (Figure 1 item 2) by way of a control signal, utilizing the controller for calculating a difference (Figure 1 item 11) between the target displacement (Figure 1 item 15) and an actual displacement (Figure 1 item 16) of the stepping motor; and utilizing the controller (Figure 1 item 1) for generating a control signal or parameter according to difference, and the actual

displacement. However, Baur does not specifically disclose the stepper motor moving a load and utilizing the controller (Figure 1 item 10) to compare the difference and a threshold value, wherein if the difference is greater than the threshold value, a parameter is utilized to update the control signal or parameter.

Kau discloses a controller (Figure 1 item 10) for sending control signals to the stepper motor (Figure 1 item 48) for controlling a load (Figure 1 item 54). Kau discloses utilizing the controller (Figure 1 item 10) to compare the difference and a threshold value, wherein if the difference is greater than the threshold value; the parameter (read from an sensor) is utilized to update the control signal or parameter. However, neither Baur nor Kau discloses the stepping motor applied to a scanner and the loading device is a scanner module of the scanner.

Kobayashi discloses a stepping motor (Figure 5 items 224 and 238) applied to a scanner (Figure 5 item 10) and the loading device is a scanner module (Figure 5 item 11) of the scanner.

It would have been obvious to one of ordinary skill in the art at the time of invention to use Baur's an arrangement for and method of operating an electric step motor and Kau's invention with Kobayashi's a invention. The advantage of combining the two would provide a stepping motor controller capable of reducing power consumption of a stepping motor and a image forming reader.

### **Allowable Subject Matter**

7. Claims 4 and 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 8-11 and 17-19 are rejected as being depended on the rejected based independent claims.



**Conclusion**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent prior arts of record related to control of stepping motors are disclosed in the PTO-892.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tyrone W. Smith whose telephone number is 571-272-2075. The examiner can normally be reached on weekdays from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on 57-272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tyrone Smith  
Patent Examiner

Art Unit 2837

  
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PRIMARY EXAMINER